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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER				
LANGMAN, JONATHAN C				
ART UNIT		PAPER NUMBER		
1784				
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/542,862

Applicant(s)

COOK ET AL.

Examiner

JONATHAN C. LANGMAN

Art Unit

1784

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 4-11, 20 and 22-25 is/are pending in the application.
- 4a) Of the above claim(s) 11 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 4-10, 20 and 22-25 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-945)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 24 and 25 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Claim 24, line 12, recites that the "two legs are oriented at an angle other than 90 degrees with respect to the pane of glass." The cited phraseology clearly signifies a "negative" or "exclusionary" limitation for which the applicants have no support in the original disclosure. Negative limitations in a claim which do not appear in the specification as filed introduce new concepts and violate the description requirement of 35 USC 112, first paragraph, *Ex Parte Grasselli, Suresh, and Miller*, 231 USPQ 393, 394 (Bd. Pat. App. and Inter. 1983); 783 F. 2d 453.

The examiner can not find and applicant has not shown support for these ranges of angles. The examiner only sees Figure 1, which does show one embodiment where the feet are angled with respect to the pane of glass, however, this is not support for the negative claim limitation excluding 90°, as well is not support for the legs being all angles other than 90°.

Claim 25 is rejected for being dependent upon a base rejected claim.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1, 4-10, 20, 22, and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation "the spaced part connection points" in line 13. There is insufficient antecedent basis for this limitation in the claim.

Claims 4-10, 20, 22, and 23 are rejected for being dependent upon a base rejected claim.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 4, 8, 9, 20, 23, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boaz (US 4,246,467) in view of Castle et al. (EP 1110431) as evidenced by Sarkhel et al. (US 2001/0002982).

Regarding claims 1 and 20, Boaz et al. teach a vehicular glazing panel comprising a pane of glass, 10. A first electrically conductive component, 12, which

exists on a surface of the pane of glass; and a second electrically conductive component, 14, comprising an electrical terminal (connector), formed thereon (col. 3, lines 23-40). The electrical connector, 14, comprises two spaced apart connector feet, 16, and a connector bridge, 18, connected to both of the feet, wherein the connector bridge is spaced from the first electrically conductive component, 12, so that an area of the first electrically conductive component, 12, between the spaced apart connection points is exposed (see figure 2, and col. 3, lines 35-45).

Boaz teaches that the connector feet 16, of the electrical connector, 14, are soldered to the first electrically conductive component (col. 3, lines 55-70).

Boaz is silent to the solder composition, specifically being a lead free solder including tin in an amount of less than 50% by weight, and a mechanical stress modifier, which inhibits the occurrence of a stress fault in the pane of glass in the region of the solder, in the form of bismuth or antimony metal.

However it would have been obvious to use any known solder in the art. Castle et al. teach as seen in Figure 2, a windshield comprising multiple layers of glass sheets, 21 and 22, a busbar, 6, is connected to heating wires through the use of a low melting solder, 26 ([0021] and [0023]). Castle et al. teach that by using a low melting point solder, connections between two electrically conductive components can be made during the autoclave process of forming the windshield ([0003], [0021] and [0029]).

The low melting solder is taught to be tin/bismuth eutectic with a melting point of 138°C ([0003] and [0021]). Castle is silent to the composition of the Tin/bismuth eutectic solder, however, tin/bismuth eutectic solder is a lead free solder known in the

art to comprise tin in amounts of less than 50% and a mechanical stress modifier comprising bismuth. Sarkhel et al. evidences that the eutectic Bismuth/Tin solder is 58-Bi/42-Sn, which has a melting point of 138°C (Sarkhel, [0040]).

It would have been obvious to use this low melting point solder taught by Castle, to connect the components of Boaz, as this solder is a known solder in the art of connecting conductive components on glass panes of windshields. Furthermore, Castle teaches that these solders can melt and flow during the autoclave process, i.e. soldering occurs during the process steps of forming the windshield, thereby eliminating a step of soldering.

The solder comprises Bismuth which is a mechanical stress modifier and reads on the claims as presented. Although Castle et al. do not refer to bismuth as a mechanical stress modifier, these solders share compositions similar to those instantly claimed, and therefore are expected to behave in similar manners to those instantly claimed (i.e. which inhibits the occurrence of a stress fault (i.e. crack) in the pane of glass in the region of the solder). It has been held that where the claimed and prior art products are identical or substantially identical in structure or are produced by identical or a substantially identical processes, a *prima facie* case of either anticipation or obviousness will be considered to have been established over functional limitations that stem from the claimed structure. *In re Best*, 195 USPQ 430, 433 (CCPA 1977), *In re Spada*, 15 USPQ2d 1655, 1658 (Fed. Cir. 1990). The ***prima facie*** case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed products. *In re Best*, 195 USPQ 430, 433 (CCPA 1977).

Since Castle et al. teach the same solder composition as instantly claimed, i.e. a solder with less than 50 wt% Tin and that the solder also comprises bismuth, it is inherent that the solder, when used in the windshield of Boaz, will behave in the same manner as instantly claimed, i.e. it will inhibit the occurrence of a stress fault in the pane of glass in the region of the solder.

Regarding claim 4, since the vehicular glazing panel of Boaz and Castle et al. has the same structure and the same materials as the instantly claimed vehicular glazing panel, it is inherent that it will exhibit the same fall in the stress generated in the pane of glass after an initial rise, described as a function of time, as instantly claimed (see *in re best case law* applied above).

Regarding claim 8, the vehicular glazing panel of Boaz and Castle et al. has the same structure and the same materials as the instantly claimed vehicular glazing panel, therefore it is inherent that the stress fault manifests itself as a structural defect in the interface between the solder and the first electrically conductive component. See *In re Best* as applied above.

Regarding claim 9, the first electrically conductive component, 12, is a bus bar, and the second electrically conductive component, 14, is an electrical connector (Fig. 1, Fig.2, col. 2, lines 10-17, and col. 3, lines 20-35)

Regarding claims 23 and 24, as seen in Figure 1, the second electrically conductive component, 18, is a T-piece connector including a connector arm which intersects the bridge portion and extends away from the bridge portion. The connector arm is taught to attach to an electrical source (i.e. an electrical lead) (Boaz, col. 2, lines

10-16). As seen in Figure 2, the second electrically conductive component comprises a connector bridge 18, that comprises two legs, 20, which extend away from the connector feet, 16, at an incline so that the two legs are oriented at an angle other than 90 degrees with respect to the pane of glass (see figure 3, the top down view of Figure 2, which shows that the legs, 20, are angled).

Claims 5 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boaz (US 4,246,467) in view of Castle et al. (EP 1110431) as evidenced by Sarkhel et al. (US 2001/0002982), as applied to claim 1 above, and further in view of Karla (US 4,618,088).

Boaz teaches the glazing panel described above, comprising a pane of glass, a first electrical conductor comprising a bulbar, and a second electrical conductor comprising an electrical connector, wherein the first and second conductors are soldered together by the obvious solder taught by Castle et al.

Regarding claim 5, Boaz is silent to an embodiment where the pane of glass is provided around its periphery with a fired-ink band on top of which the first electrically conductive component at least partially exists.

Karla et al. teach a vehicular glazing panel comprising a pane of glass, 1 (Figure 1 and 2, col. 2, lines 44-47). An obscuration band, 5, is formed on the surface of the glass (col. 2, lines 65-67), upon which is deposited a first conductor, 3, comprising a printed layer of fired ink (abstract and col. 3, lines 1 and 55-60). A current connecting element, 14, is provided thereon (col. 3, lines 47-59 and Figure 2), which reads on the

claimed second electrically conductive component. Karla teaches that the first and second conductive components are connected to each other through a molten solder (col. 4, lines 10-24).

Karla et al. teach that around its periphery is provided a fired ink band, 5, (masking band) upon which is deposited the first electrically conductive component, 3. The band serves the function of masking the current feed conductors and structures to provide a neat appearance for the viewing area (Figure 2, col. 3, lines 3-20).

It would have been obvious to one of ordinary skill in the art at the time of the present invention to provide a fired ink band around the periphery of the pane of glass of Boaz, in order to mask the connectors and other components formed on the pane of glass in order to provide a neat appearance for the windshield as is known in the art.

Regarding claim 10, as described above, Boaz et al. teach that their first and second electrical components comprise a busbar and electrical connector, respectively.

Karla teaches this similar structure, where the first and second components are a busbar and an electrical connector as described above. However Karla also teaches that the first conductive components may be an antenna element as opposed to busbars connecting heating strips and that the second conductive component would then be an antenna connector (Karla, col. 4, lines 25-40). It would have been obvious to one of ordinary skill in the art at the time of the present invention make the first and second conductive components of Boaz to be an antenna element and antenna connector respectively, as Karla recognizes that these are known alternative

embodiments in the art and known end uses of the fired bands of ink formed on a windshield.

Claims 6 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boaz, Castle et al., Sarkhel et al. and Karla, as applied to claim 5, above, in view of Marriot et al. (4,119,425).

Regarding claim 6, Boaz teaches that the pane of glass is only one pane of glass, as seen in the Figures, however is silent to the pane of glass being toughened.

Marriott teaches that the glass pane can be heat treated (toughened) in order to prevent the formation of permanent stresses in the glass and obviate the tendency of the glass to crack (col. 6, lines 60-66). It would have been obvious to toughen the vehicular glazing panel of Boaz in order to prevent cracks, and to toughen the glazing panel, as is known in the art. The vehicular glazing panel of Boaz, Marriott, Karla, and Castle et al. has the same structure and the same materials as the instantly claimed vehicular glazing panel, therefore it is inherent that the stress fault will manifest itself as blisters in the fired ink band and in the corresponding regions of glass (see in re best case law applied above).

Regarding claim 7, Boaz is silent to the pane of glass being one ply of a laminate. Marriott teaches in the same art as Boaz, a rear windshield, comprising on the inside cabin surface first electrical components, such as heating elements, connected to bus bars (first electrically conductive component) which are in turn connected to suitable terminals (second electrically conductive component) (Marriot,

col. 2, lines 46-col. 3, lines 41). Marriott et al. teach that their invention can utilize single sheets of glass, as well as multiple layered sheets of glass such as conventional laminated windows (col. 2, lines 59-66), wherein the components are formed on the inside surface of the window (col. 3, lines 37-41).

It would have been obvious to one of ordinary skill in the art at the time of the present invention to utilize multiple layered sheets of glass such as conventional laminated windshields, as the windshield taught by Boaz, as these are known alternatives to single panes of glass in the art of vehicular rear windshields.

The vehicular glazing panel of Boaz, Castle, Karla, and Marriott et al. has the same structure and the same materials as the instantly claimed vehicular glazing panel, therefore it is inherent that the stress fault will manifest itself as blisters in the fired ink band and in the corresponding regions of glass (see in re best case law applied above).

Claims 22 and 25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boaz (US 4,246,467) in view of Castle et al. (EP 1110431) as evidenced by Sarkhel et al. (US 2001/0002982), as applied to claims 1 and 24 above, and further in view of Marriot et al. (4,119,425).

Boaz teaches that the first electrically conductive component, 12, comprises a busbar and is a resistance metal composition the type and method of attachment to the glass being part of the prior art and unnecessary to be further described herein (Boaz, col. 3, lines 15-30). Boaz fails to teach that the busbar is a printed layer of fired silver containing ink.

Marriot teaches in the same art as Boaz that busbars are formed of fired silver glass frit compositions formed on glass panes (col. 3, lines 30-35 and col. 5, lines 65-col. 6, lines 3).

It would have been obvious to one of ordinary skill in the art at the time of the present invention to apply the busbars of Boaz, as a printed layer of fired silver containing ink, as these are known and obvious methods and materials for applying busbars to windows.

Response to Arguments

Applicant's arguments with respect to claims 1, 4-10, 20, and 22-25 have been considered but are moot in view of the new ground(s) of rejection.

Applicant amended the claims to define the features of the second electrically conductive component, which are features that have not previously been presented. Therefore applicants' amendments necessitated a new search and consideration.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JONATHAN C. LANGMAN whose telephone number is (571)272-4811. The examiner can normally be reached on Mon-Thurs 8:00 am - 6:30 pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JCL

/Jennifer C McNeil/
Supervisory Patent Examiner, Art Unit 1784